

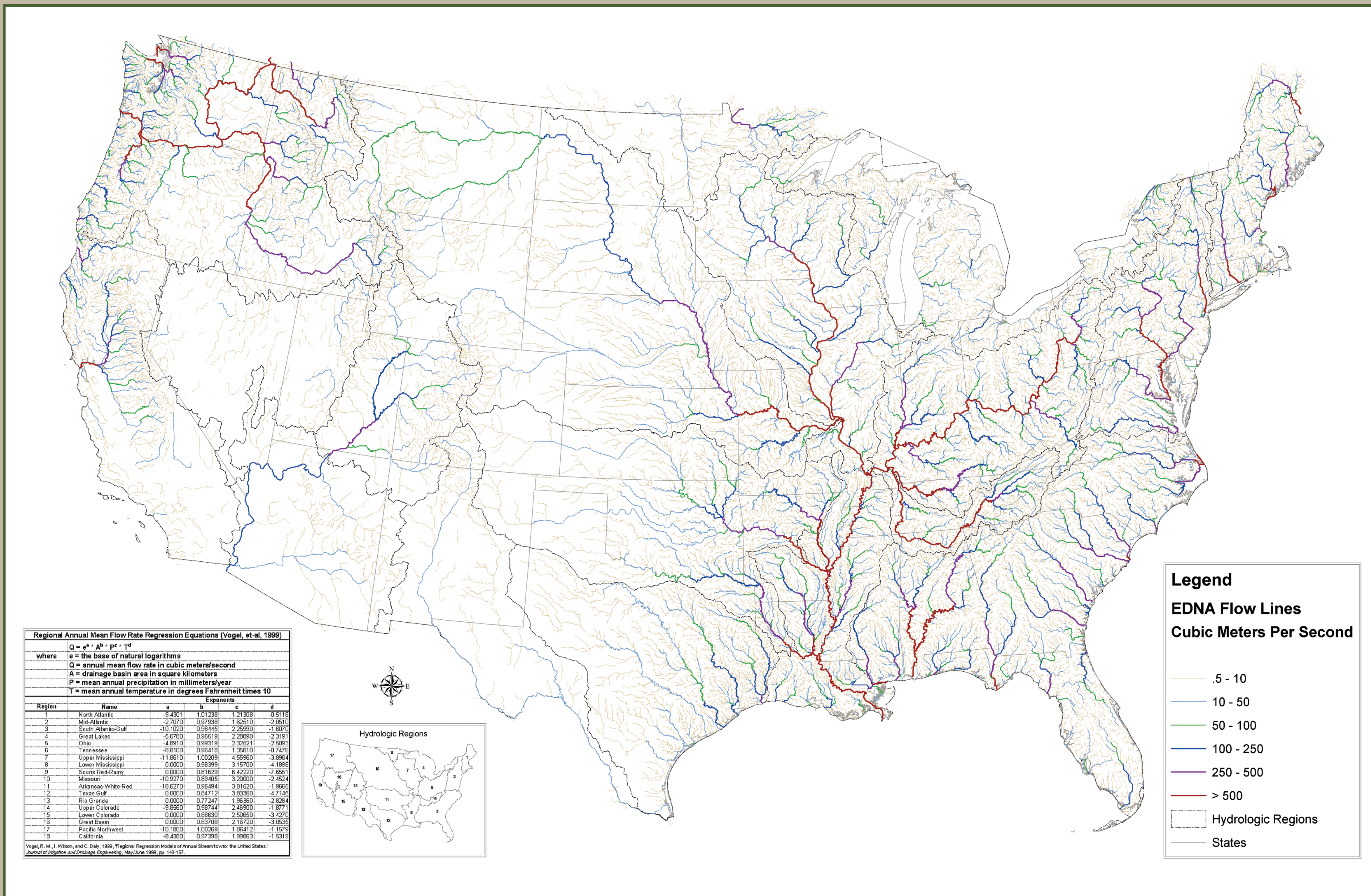
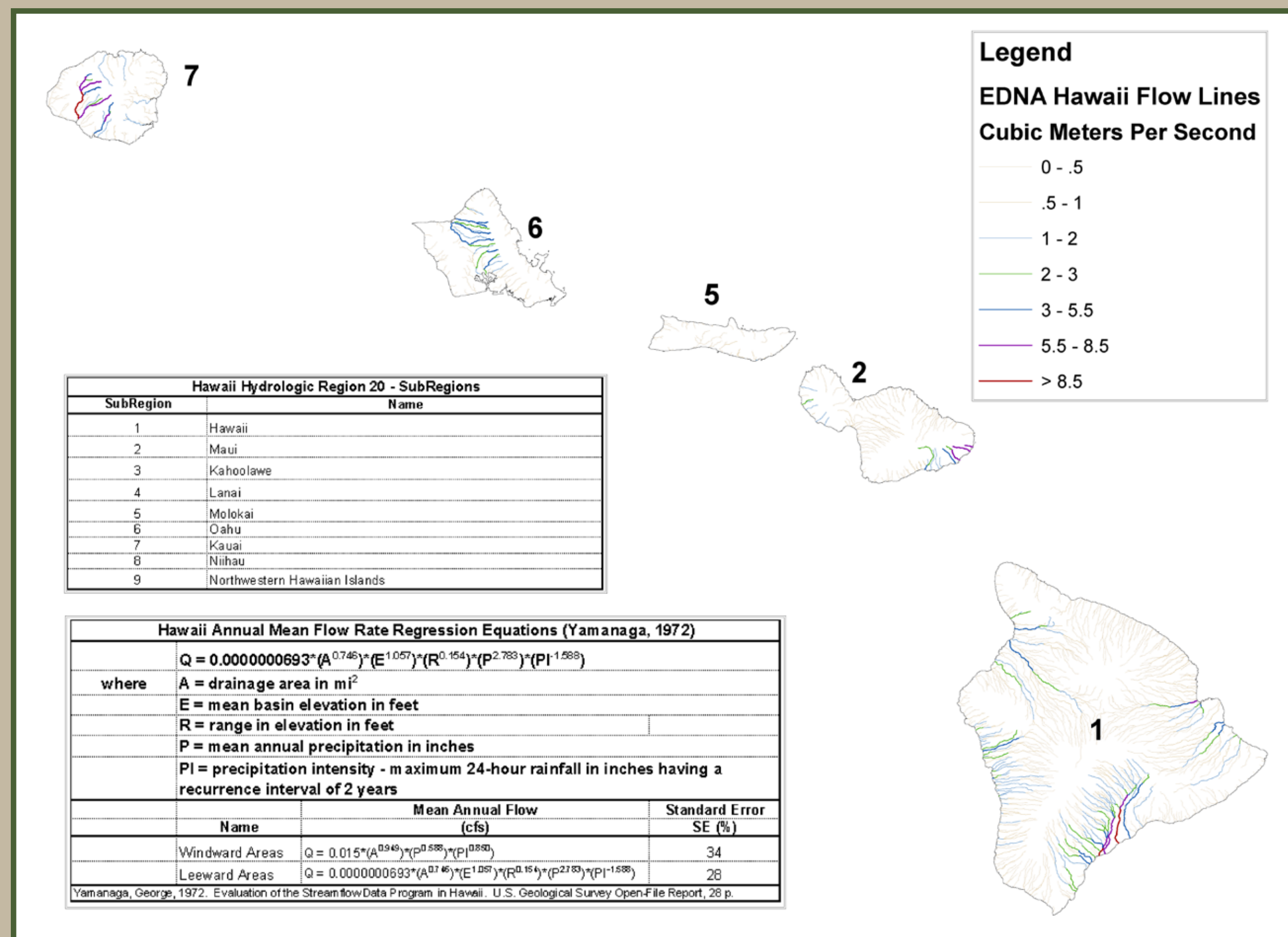
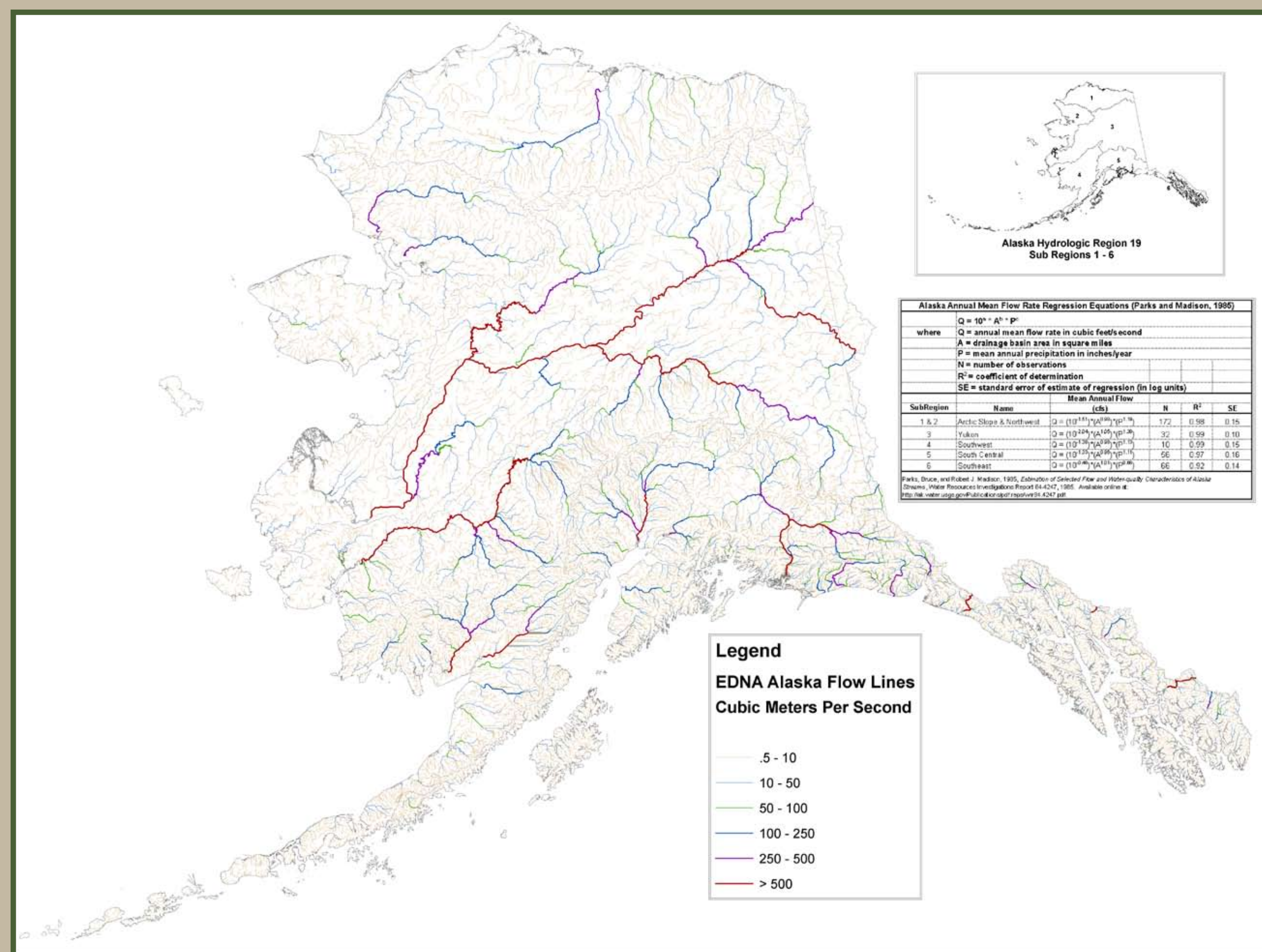
EDNA Stream Attributes and Applications

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Elevation Derivatives for National Applications (EDNA)

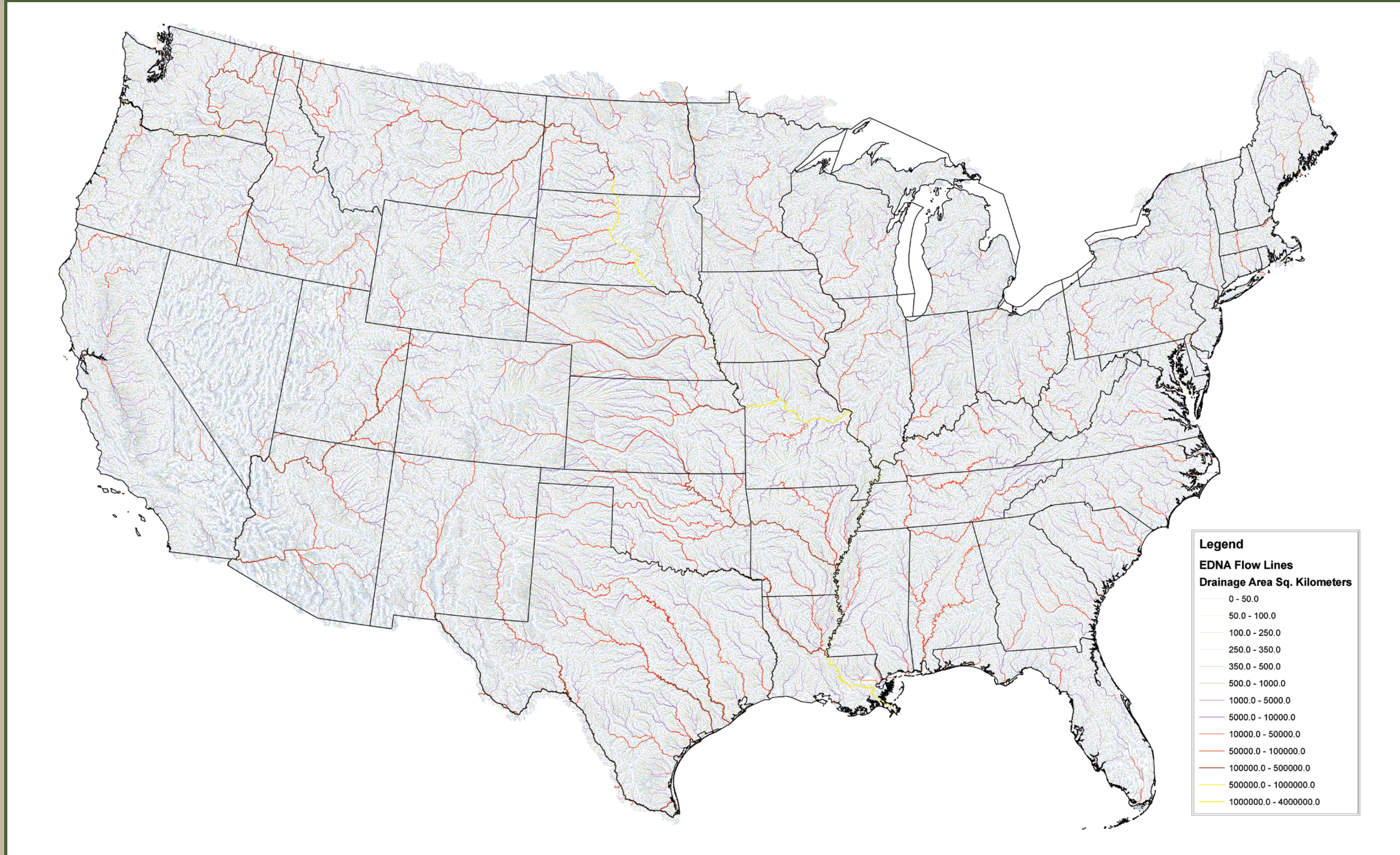
EDNA is a multi-layer hydrologic database comprised of derivative layers developed from the National Elevation Dataset (NED). Some of the EDNA layers include a hydrologically-conditioned elevation surface, flow direction, flow accumulation, slope, aspect, contours, drainage lines, and catchments. These layers are at 30-meter resolution for the conterminous United States, 60-meter for Alaska, and 10-meter for Hawaii. For information about the hydrologic derivatives, please visit the EDNA Web site at edna.usgs.gov.



Mean Annual Stream Flow

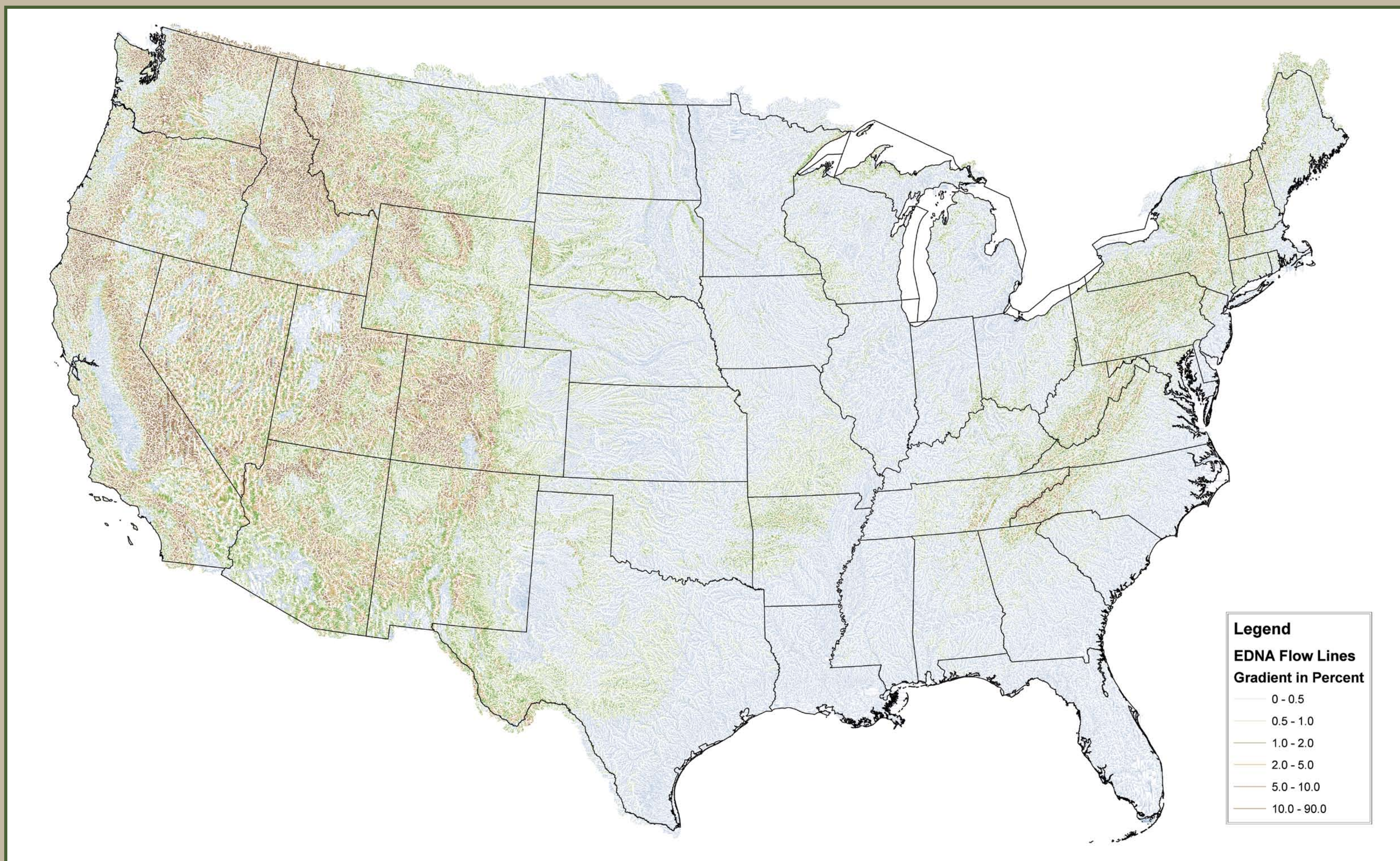
The EDNA database was used, along with climatic datasets, to develop flow estimates for every stream reach in the EDNA database. The estimates of mean annual stream flow for each of the 50 states were derived using regional regression equations, which were functions of the climatic variables of mean annual precipitation and temperature, precipitation intensity, drainage area, and other elevation-derived parameters.

The estimates of stream flow were quantified and symbolized with graduated colors using manual break points. The result is a nation-wide map of the mean annual stream flow estimates for the conterminous United States.



Drainage Area

The EDNA drainage area was derived from EDNA flow accumulation represented in the values associated with each pixel. Drainage area was quantified and symbolized with graduated colors using manual break points. The result is a nation-wide map of the EDNA drainage area for the conterminous United States. Shown here are the lower 48 states.



Stream Gradient Derived from EDNA

The EDNA stream gradient was derived from the elevation and length attributes of EDNA's stream reaches. In a collaborative effort with the Department of Energy's (DOE) Idaho National Engineering and Environmental Laboratory (INEEL), these attributes were used to provide estimates of power potential for more than 1,000,000 stream segments or reaches within the EDNA database. This gradient information can be used in future hydrologic and hydraulic applications.